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+5V(A), AA2 — C1 C2 C3 C4 C5 C6 C8 C20 6.8UF 35V — R7 1K — +3V
BT1, AT1, BC2, AC2 — C7 C9 C10 C11 C12 C13 C14 C15 C17 C18 C21 6.8UF 35V
+5V(B), BA2

MB 3 (Ø) BD2
MB 4 (Ø) BE2
MB 5 (Ø) BE1
MB 6 (Ø) BF2
MB 7 (Ø) BF1
MB 8 (I) BH2
E14 — E13
IOP 1 (I) AJ12 — E9 — E13 — AM2 TP
IOP 2 (I) AV2 — E9
IOP 4 (I) BK1 — E9
+5V(B) R6 470 — C19 560PF 5% — C24 180PF 5% — R5 220 — D2 D664 — E9 — E2 — AJ1 TP
+5V(B) R14 1K — BC1 — E16 — TP AT2
E6 — AK2 I/Ø BUSS IN SKIP
E6 — AL2 I/Ø BUSS IN INT
+3V — E5 RUN — E5 FLAG
E2 — E6 — BL2 OUT OF TAPE
+5V(A) C22 3.9UF 10V 10% — R1 10K — D1 D664 — BU1 ON/OFF LINE — R4 100 — C23
E6 — E3 7ms — +3V
E8 — +3V
CLOCK I BS2 — E2 — E2 — E8 — E10 — E8
CLK BB1 — STOP COMPLETE BN2 — E10
TP BN1
FEED SWITCH BM1 — RDR RUN AK1 — R2 470 — +5V(B) — E10
SHIFT BD1 — E15 ENABLE — BK2 ENABLE (Ø)
E15 POWER — STOP DELAY BV1 — E17 — BR2 POWER
+5V(A) R16 560
INITIALIZE BP1 — E13 — E13
E8 — E19 — E19
+3V — E18 "A" — E18 "B" — SHIFT BJ1 — E19 — E16 — E16 — E13 — BA1 TP
+5V(B) — FEED HOLE BM2 — R11 330 — R9 4.7K — C16 .47UF 35V 10% — Q2 MPS6531 — R10 100 — R12 4.7K — R13 220 — Q1 MPS6531 — E17 — R15 270
BT2 INHIBIT STROBE
E17 — BS1 BA(Ø) — E17 — BP2 BA(1) — E17 — BU2 BB(1) — E17 — BR1 BB(Ø)
E16 — R3 47 — E12 — +5V(A) R9 470 — E12 — E8
TP AC1

RD HOLE 8 AF1 — E4 — E7 — AP2 I/Ø BUSS IN4
RD HOLE 7 AF2 — E4 — E11 — AS2 I/Ø BUSS IN 5
RD HOLE 6 AH1 — E4 — E11 — AR1 I/Ø BUSS IN 6
RD HOLE 5 AH2 — E4 — E7 — AN2 I/Ø BUSS IN 7
RD HOLE 4 AE1 — E1 — E11 — AS1 I/Ø BUSS IN 8
RD HOLE 3 AE2 — E1 — E7 — AP1 I/Ø BUSS IN 9
RD HOLE 2 AD1 — E1 — E11 — AR2 I/Ø BUSS IN Ø
RD HOLE 1 AD2 — E1 — E7 — AN1 I/Ø BUSS IN 11

UNLESS OTHERWISE INDICATED:
RESISTORS = 1/4W, 5%
CAPACITORS = .01UF, 100V, 20%
DEC7401 = E6, E7, E11
DEC9601 = E3
DEC7404 = E8, E13, E17
DEC7475 = E1, E4
DEC7474 = E5, E15, E18
DEC7400 = E2, E9, E16, E19
DEC7410 = E10
DEC7430 = E14
DEC7440 = E12
PIN 12 = GND, PIN 5 = +5V ON E1, E4
PIN 7 = GND, PIN 14 = +5V ON ALL OTHER IC'S

REVISIONS			
SYM	CHG ORD	REV	
A	3000	C	

DRN Nancy Moore — DATE 2/2/71
CHKD — DATE 2-24-71
ENG — DATE 4-1-71
PROD — DATE

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA
MPS6531	MPS6531	D664	IN3606

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: READER CONTROL

SIZE	CODE	NUMBER	REV
D	CS	M7050-0-1	C

PRINTED CIRCUIT REV D

SIZE CODE D CS NUMBER M7050-0-1 REV C

DEC FORM NO. 0000 116

SIZE	CODE	NUMBER	REV.
B	CS	5408918-0-1	A

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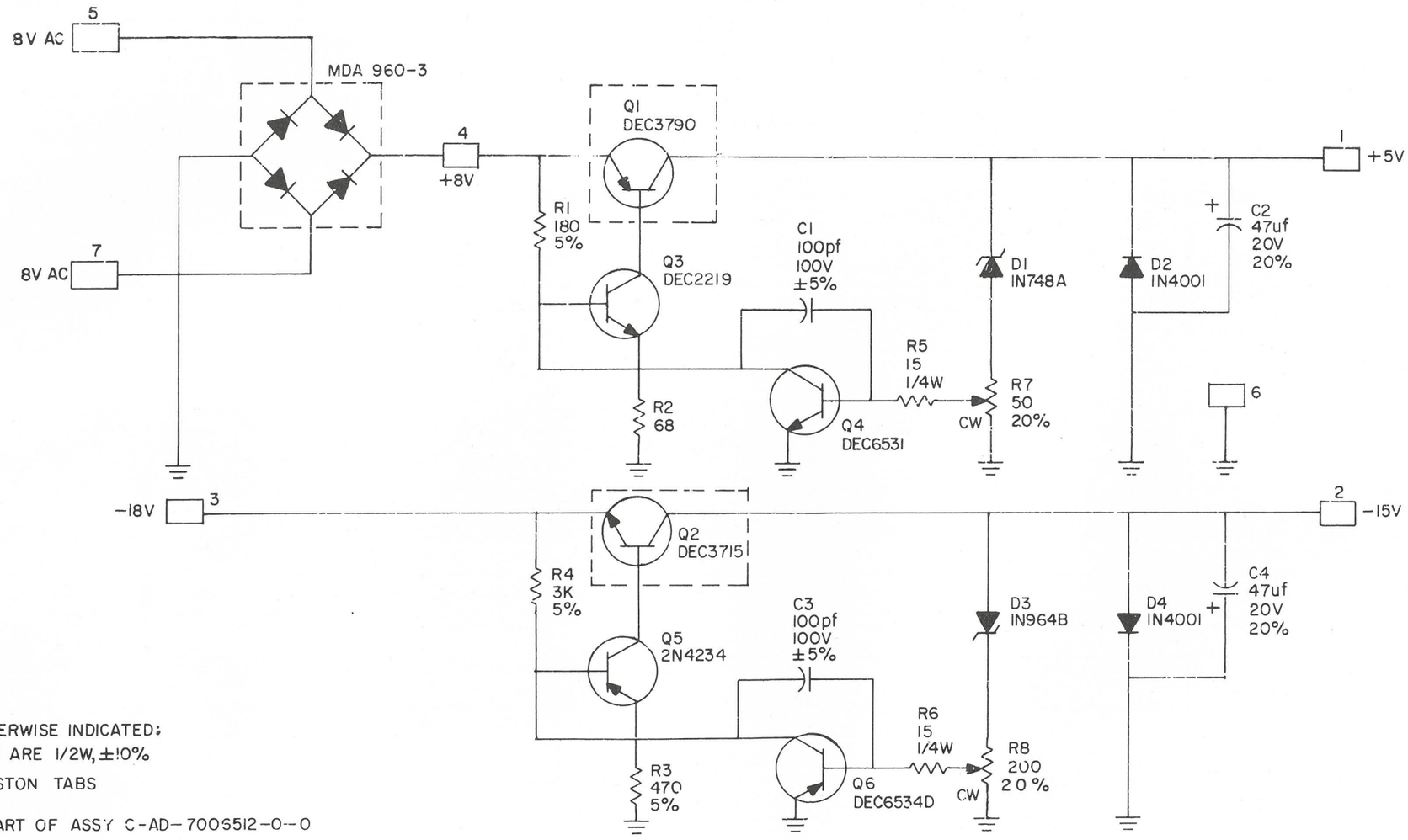

UNLESS OTHERWISE INDICATED:
RESISTORS ARE 1/2W, ±10%
□ = FASTON TABS
[ ] PART OF ASSY C-AD-7005512-0-0

REVISIONS	REV	CHG NO	CHK

DRN. NANCY MOORE	DATE 7/8/70	
CHK'D	DATE 9/8/70	
ENG.	DATE 10/12/70	
PROD.	DATE	

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA
DEC3790-2	2N3790	DEC6531	MPS6531
DEC2219	2N2219	IN748A	SAME
DEC3715	2N3715	IN964B	SAME
2N4234	2N4234	IN4001	SAME
DEC6534D	MPS6534		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE PCO REGULATOR
5408918

SIZE	CODE	NUMBER	REV.
B	CS	5408918-0-1	A

PRINTED CIRCUIT REV. B

DEC FORM NO
DRB 102

PAT. 3,249,834 3,355 Page 5

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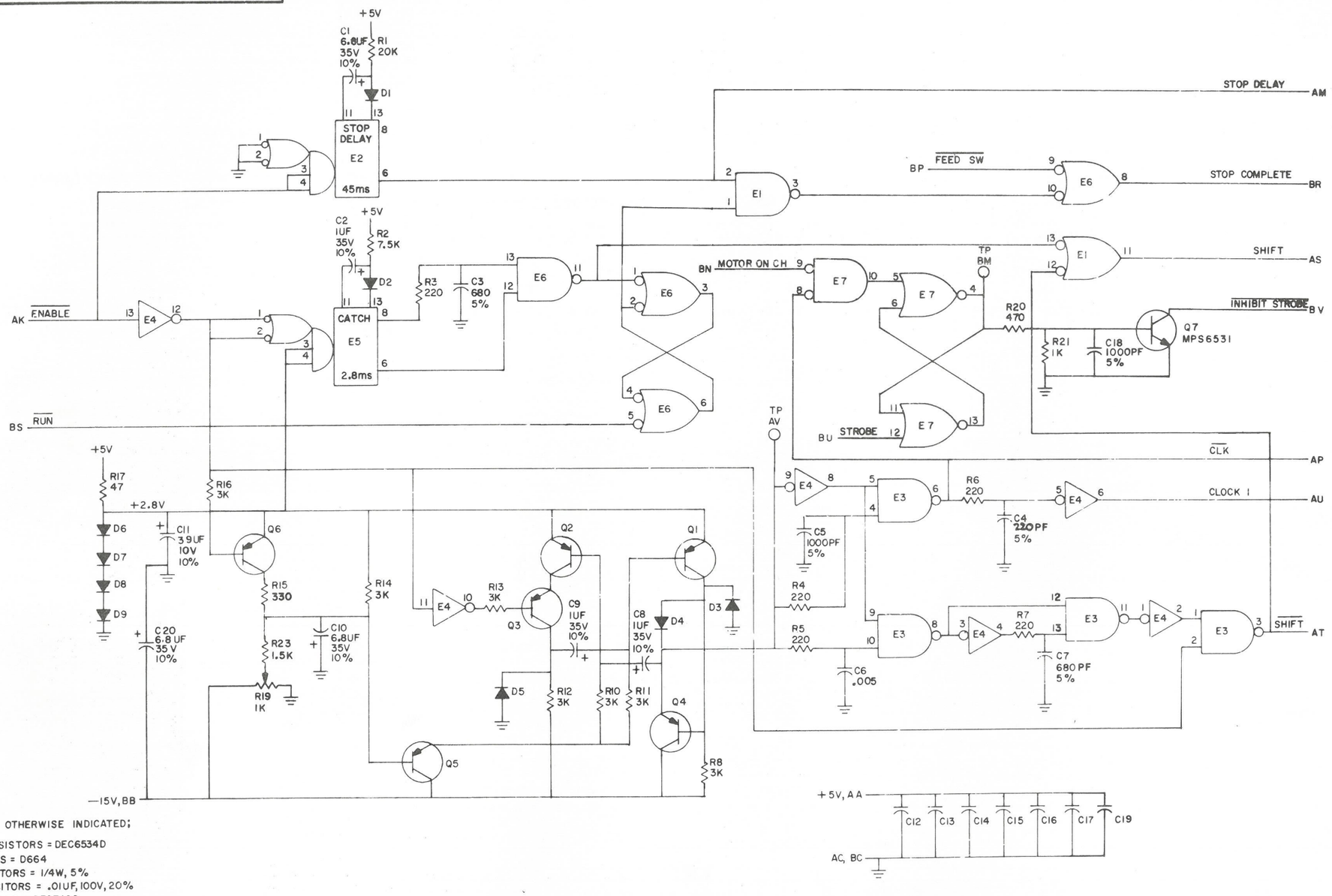


UNLESS OTHERWISE INDICATED;

TRANSISTORS = DEC6534D
DIODES = D664
RESISTORS = 1/4W, 5%
CAPACITORS = .01UF, 100V, 20%
E1, E3, E6 = DEC7400
E4 = DEC7404
E2, E5 = DEC9601
PIN 7 = GND ON ALL IC'S
PIN 14 = +5V
E7 = DEC7402

REVISIONS			
CHK	CHG NO.	REV	
AY	00002	E	K
	00006		REV @ REDR
	& CANCELS		
	ECO 00005		
	00007	L	
	00008		

DRN	M. HALLER	DATE 10/16/67
CHK'D	R. SILVERMAN	DATE 11/2/67
ENG.	R. G. SOGGE	DATE 11/2/67
PROD.		DATE

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA
DEC6534D	MPS6534	IN758	SAME
D664	IN3606		
DEC6531	MPS6531		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

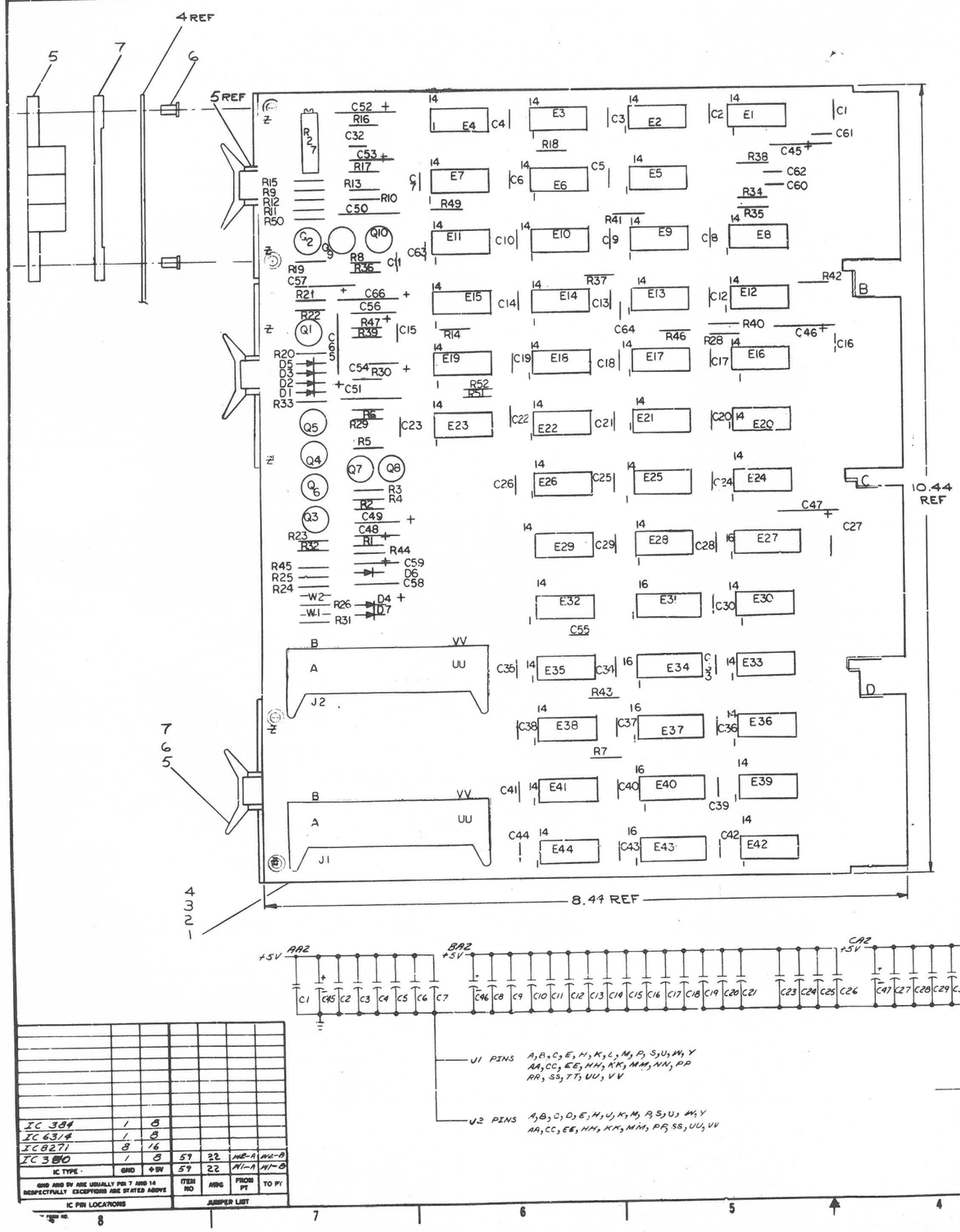
TITLE: READER CLOCK M715

SIZE	CODE	NUMBER	REV.
C	CS	M715-0-1	L
PRINTED CIRCUIT REV.		F	

SIZE C CS | NUMBER M715-0-1 | REV. L

DEC FORM NO. DRC 102

4 PINK



QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		
1	CG1	CAP 15 UUF 250V ±10% CER	5¢	62
1	R222	CAP .025UF 100V ±20% CER	1001006	61
1	R44	RES 75 1/4W 5%	1302379	60
A/R	W1, W2	WIRE 22 AWG SOLID BUS	9107540-01	59
1	E35	IC DEC 7420	9105377	58
1	E49	RES 270 1/4W 5%	1301972	57
1	E9	RES 5.6K 1/2W 5%	1301874	56
1	E13	RES 150 1/4W 5%	1300250	55
1	E8	RES 56 1/4W 5%	1302602	54
1	E21	RES 680 1/4W 5%	1301424	53
1	E47	RES 18K 1/4W 10%	1300498	52
2	J1,J2	CONN 43 PIN ET MALE HEADER	1209961	51
6	E34,E37,E40,E43	IC DEC 8271	1309615	50
~~1~~	~~E38~~	~~IC DEC 7440~~	~~1900859~~	~~49~~
2	E27, E31	IC DEC 8231	1909852	49
4	E17,E18,E33,E39	IC DEC 9601	1909705	48
2	E21, E25	IC DEC 6314	1909972	47
3	E20,E24,E30,E36,E42	IC DEC 380	1909888	46
7	E3,E6,E26,E29, E38,E41,E44	IC DEC 7404	1909686	45
4	E4,E7,E15,E19	IC DEC 9601	1909373	44
1	E16	IC DEC 384	1909886	43
2	E1, E11	IC DEC 7410	1903576	42
7	E5,E6,E13,E22, E23,E28,E32	IC DEC 7400	1905575	41
5	E2,E9,E10,E12,E14	IC DEC 7474	1905547	40
2	Q7, Q8	TRANSISTOR DEC 6531	1509338	39
8	Q1-Q6, Q9, Q10	TRANSISTOR DEC 6534D	1503409-00	38
7	R1, R4, R26, R28, E34, E38, R51	RES 220 1/4W 5%	1300271	37
22	R7, R25, R11, R12, R14, R15, R19, R20, R23, R24-R26, R31, R32, R37, R40-R43, R45, R22, R52	RES 3K 1/4W 5%	1300432	36
1	R27	RES 1K 3/4W 10% 76P2	1309143-07	35
~~2~~	~~R48, R49~~	~~RES 510 1/4W 5%~~	~~1300373~~	~~34~~
~~1~~	~~R8~~	~~RES 82 1/4W 5%~~	~~1300273~~	~~33~~
1	R17	RES 7.5K 1/4W 5%	1301422	32
~~1~~	~~R33~~	~~RES 750 1/4W 5%~~	~~1301401~~	~~31~~
1	R16	RES 15K 1/4W 5%	1300496	30
1	R39	RES 12K 1/4W 5%	1300468	29
3	R30, R36, R46	RES 10K 1/4W 5%	1300479	28
2	R2, R3	RES 4.7K 1/4W 5%	1300447	27
1	R50	RES 1.5K 1/4W 5%	1300391	26
1	R35	RES 330 1/4W 5%	1300295	25
2	R9, R10	RES 100 1/4W 5%	1300229	24
2	R29, R33	RES 47 1/4W 5%	1300203	23
~~3~~	~~D3~~	~~DIODE IN4148 SIGNAL~~	~~1100125~~	~~22~~
3	D4, D6, D7	DIODE D664	1100114	21
4	D1, D2, D3, D5	DIODE D662	1100113	20
41	C1-C21, C33-C44, C58-C60	CAP .01UF 100V 20% DISC	1001610	19
5	C45, C46, C47, C57, C66	CAP 6.8UF 35V 10% TANT	1005306	18
2	C50, C51	CAP .01UF 100V 10% MYLAR	1005784	17
2	C48, C49	CAP .33UF 20V 10% TANT	1005326	16
1	C52	CAP 15UF 20V 10% TANT	1004812	15
1	C56	CAP 2.2UF 20V 10% TANT	1002627	14
3	C53, C54, C55	CAP 1UF 35V 10% TANT	1001776	13
1	C65	CAP 39UF 10V 10% TANT	1000076	12
1	C64	CAP 3.9UF 10V 10% TANT	1000064	11
1	C62	CAP 1000PF 100V 5% MICA	1000042	10
3	C22, C32, C62	CAP 680PF 100V 5% CM	1000026	9
2	C63, C64	CAP 330PF 100V 5% CM	1000023	8
		SPACER (CABLE CLAMP)	1202704	7
3		EYELET GS4-11 STIMPSON	9006750	6
6		HANDLE FLIP CHIP-MAGENTA	9008337-06	5
1		ETCHED CIRCUIT BOARD	5008848	4
1		MODULE HISTORY LIST	B-MH-M840-0-0	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M840-0-0	2
REF		X-Y COORDINATE HOLE LOC.	K-CG-M840-0-0	1
REF				

ETCH BOARD REV J

IC 384	1	8	
IC 6314	1	16	
IC 8271	8	16	
IC 380	1	8	
IC TYPE	GND	+5V	

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE.

IC PIN LOCATIONS

ITEM NO	JUMPER LIST WIRE	FROM PT	TO PT
59	32	W2-A	W2-B
59	22	W1-A	W1-B

DEC NO.	EIA NO.
DEC 6531	MPS6531
DEC 6514D	MPS6534
D664	1N3606
D662	1N645

SEMICONDUCTOR CONVERSION CHART

DRAWN	2-8-71
CHECKED	2-9-71
ENGINEER	2-9-71
MFG	2-9-71
QUAL	
FIRST USED ON	A-ML-PC8-E
SCALE	2/1
SHEET	1 OF 3

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: READER/PUNCH CONTROL

ECS M840-0-1 REV. K

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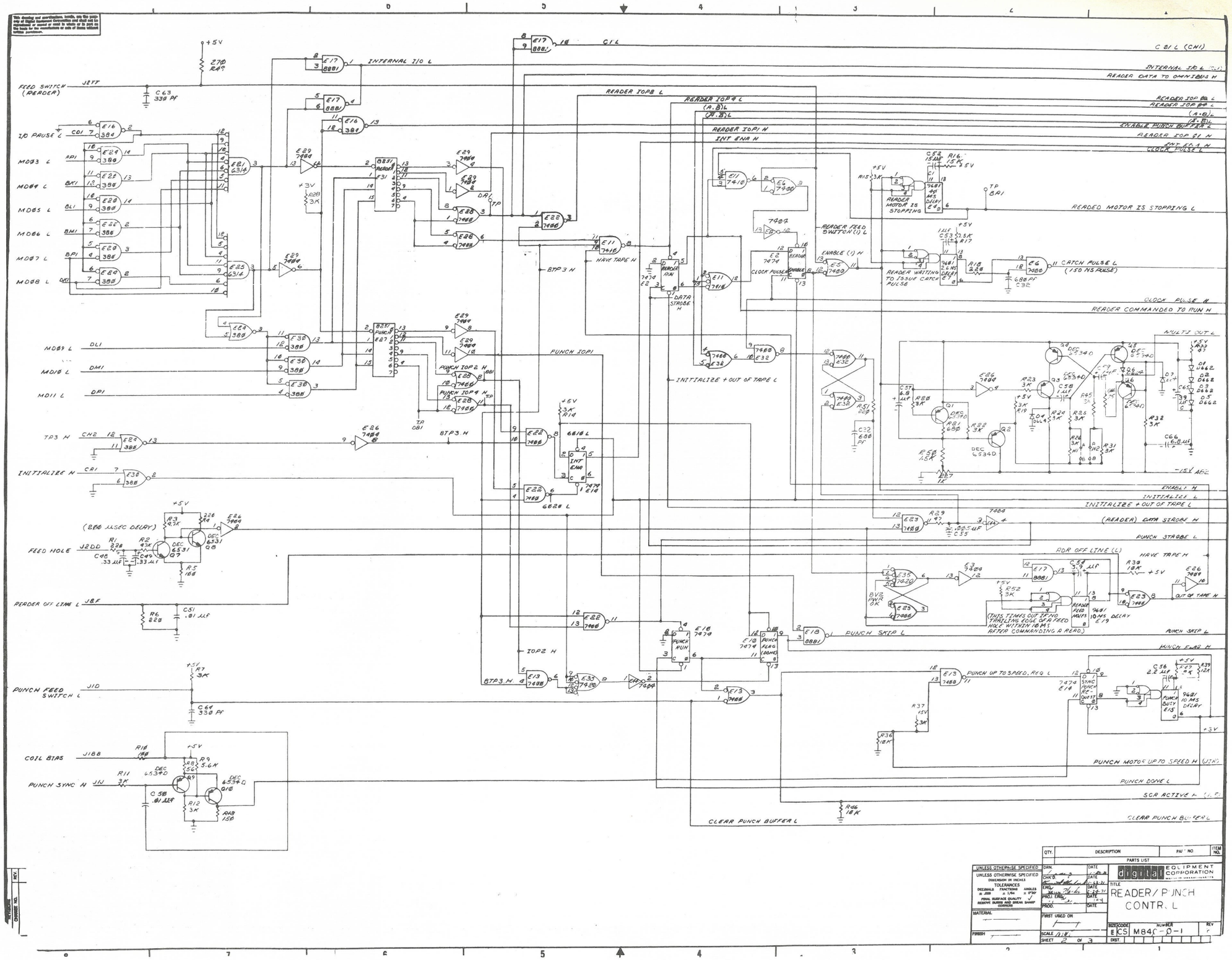

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY 125 MICRO INCHES AND BREAK SHARP CORNERS

DRN. DATE
CHK'D DATE
ENGR DATE
PROJ. ENGR DATE
PROD. DATE
MATERIAL
FINISH
FIRST USED ON
SCALE 1/1
SHEET 2 OF 3

digital EQUIPMENT CORPORATION

TITLE
READER/PUNCH CONTRL

SIZE CODE NUMBER REV
E CS M847-0-1 F
DIST.

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C01 L (CN1)
INTERNAL I/O L (CL1)
READER DATA TO OMNIBUS H
READER IOP B2 L
READER IOP BA L
(A+B) L
(A-B) L
ENABLE PUNCH BUFFER L
READER IOP Ø1 H
INT ENA H
CLOCK PULSE L
READER MOTOR 1" STOP/TAG L
CAT ON PULSE L
CLOCK PULSE H
READER COMMANDED TO RUN H
INITIALIZE L
INITIALIZE & OUT OF TAPE L
(READER) DATA STROBE H
PUNCH STROBE L
ENABLE H
OUT OF TAPE H
PUNCH SKIP L
PUNCH FLAG H
PUNCH DONE L #3
+3V
PUNCH MOTOR UP TO SPEED H (J1A)
SCR-ACTIVE H (J1F)
CLEAR PUNCH BUFFER L

J2AA POWER (1) H
CN1 C1 L
CL1 INTERNAL I/O L

HOLE 8 J1T 7404 E38 — 7404 E38
HOLE 7 J1V 7404 E38 — 7404 E38
HOLE 6 J1X 7404 E41 — 7404 E38
HOLE 5 J1Z 7404 E41 — 7404 E38
HOLE 4 J1CC 7404 E41 — 7404 E44
HOLE 3 J1FF 7404 E41 — 7404 E44
HOLE 2 J1HH 7404 E41 — 7404 E44
HOLE 1 J1LL 7404 E41 — 7404 E44

8271 E37 (PUNCH BUFFER)
8271 E43 (PUNCH BUFFER)
8271 E34 (READER BUFFER)
8271 E40 (READER BUFFER)
+3V, +5V, R41 3K, R43 3K, R92 3K, TP

BR1 DATA Ø4 L
BS1 DATA Ø5 L
BU1 DATA Ø6 L
BV1 DATA Ø7 L
DR1 DATA Ø8 L
DS1 DATA Ø9 L
DU1 DATA 10 L
DV1 DATA 11 L

J2BB RD HOLE 8
J2Z RD HOLE 7
J2X RD HOLE 6
J2V RD HOLE 5
J2T RD HOLE 4
J2R RD HOLE 3
J2N RD HOLE 2
J2L RD HOLE 1

B (A+B) L
B (A-B) L
B (-A-B) L
2 JELL BB (0)
6 JRHK BB (1)
4 JRFC BA (0)
8 JRJV BA (1)

7474 E12 — READER FLAG
7474 E9 — A
7474 E9 — B
7474 E12 — READER MOTOR 1" STOP/TAG
7474 E26 — PUNCH DONE L #3

(READER + PUNCH SKIP) CS1 SKIP L
(READER + PUNCH INT RQST) CP1 INT RQST L
J1N PUNCH DONE H
J1R PUNCH MOTOR UP TO SPEED H
J1F SCR NOTIVE H

ROTATE PULSE H
CLOCK PULSE H (150 NS PULSE)
SHIFT PULSE L (150 NS PULSE)
R39 220Ω, C60 1000 PF
R35 330, C61 150Ø PF, R38 220, C62 680 PF

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √ REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRWN. L. Lyons DATE 10-6-70
CH'D. DATE
ENG. Larry Parker DATE 2-24-71
PROJ. ENG. DATE
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD, MASS. U.S.A.

TITLE READER / PUNCH CONTROL

SCALE
SHEET 3 OF 3
SIZE CODE E NUMBER CS M840-0-1 REV. K
DIST.

REV. | CHANGE NO. | CHK.

FORM NO.

SIZE	CODE	NUMBER	REV.
B	CS	5408308-0-1	C

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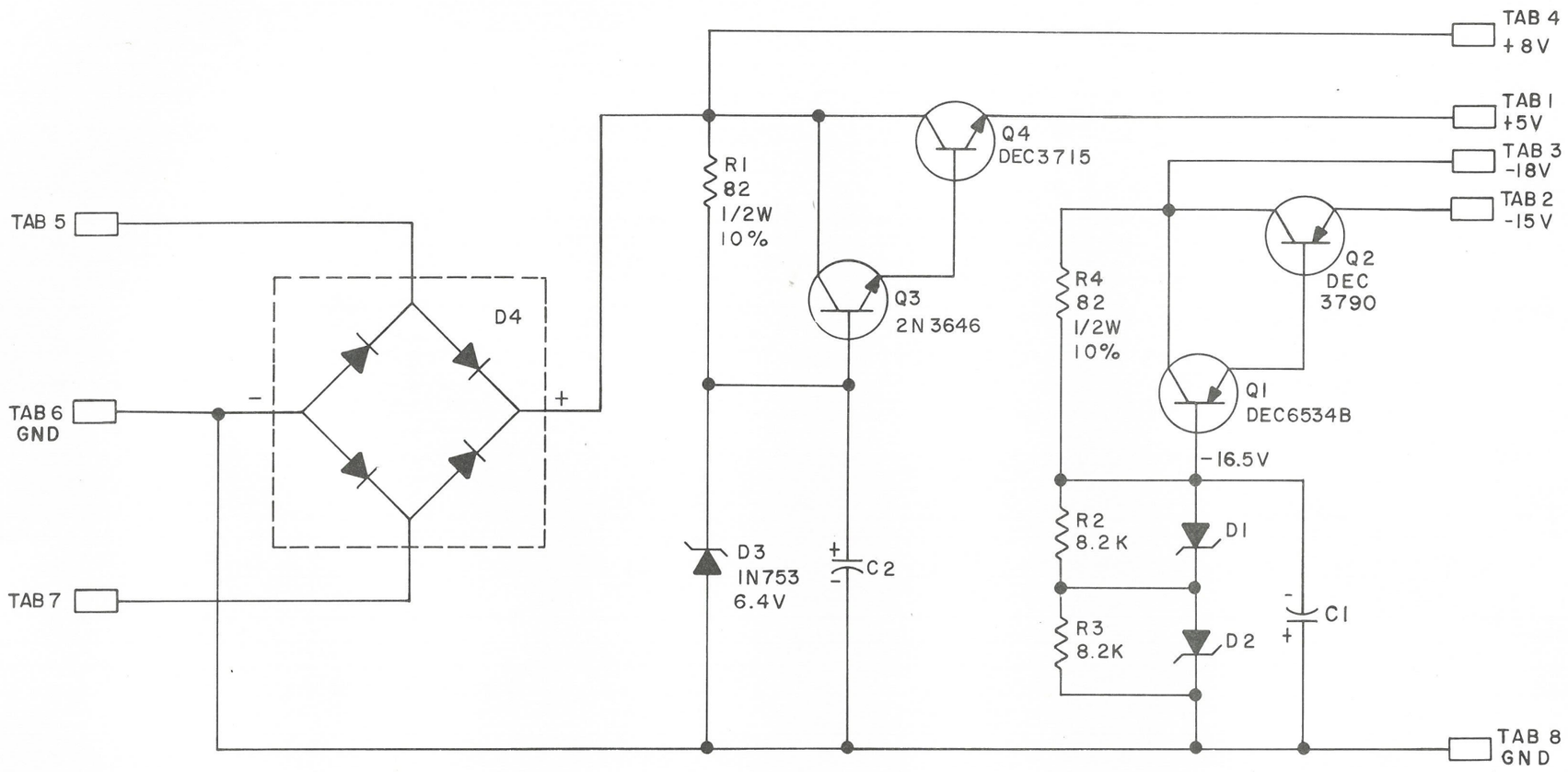

UNLESS OTHERWISE INDICATED:
CAPACITORS ARE 6.8 MFD 35V 20%
DIODES ARE IN756A, 8.2V
D4 IS MDA960-3
RESISTORS ARE 1/4W 5%
TABS ARE AMP 41290

REVISIONS	REV.	CHG NO.	CHK
	A	00001	
	B	00002	
	C	00003	

DRN. R Gutierrez	DATE 3-31-69	
CHK'D M. Marchand	DATE 4/1/69	
ENG: Tom S. Dick Able	DATE 5-14-69	
PROD.	DATE	

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA
IN753	SAME	2N3646	2N3009
IN756A	SAME		
DEC3790	2N3790		
DEC6534B	MPS6534		
DEC3715	NONE		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE PCO POWER SUPPLY REGULATOR 5408308

SIZE	CODE	NUMBER	REV.
B	CS	5408308-0-1	C

PRINTED CIRCUIT REV. D

DEC FORM NO.
DRB 102